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AIR RAID PRECAUTIONS

CASUALTY CLEARING ORGANIZATION

BY

R. E. W. FISHER, M.B., B.Ch.

It should now be profitable to consider the official scheme for the clearance of casualties in air raids and to analyse, if possible, the theoretical considerations upon which the scheme is built and the practical organization designed to give effect to it. I wish to emphasize that the views expressed in this article are my own and not necessarily those of the local authority which employs me. I am here concerned mainly with the problems of casualty clearance and only incidentally with other aspects of the work.

It seems to be generally agreed that in any future war London will be the first target. It is also fairly generally agreed that it will be more difficult to organize the clearance of casualties there than elsewhere in the country. I therefore propose to discuss the problem primarily as it affects London.

Present Organization

The scheme is outlined in the Home Office Air Raid Precautions Memorandum No. 1, to some extent in Memorandum No. 7, and in a number of other Home Office pronouncements. In skeleton the organization is as follows:

First-aid Parties.—First-aid parties, consisting each of four men, to the scale of 12 to 15 parties per 100,000 of population (with a 25 per cent. reserve), and each provided with a motor-car, collect casualties from the streets or other places where they occur, and administer elementary first aid. They send the slightly injured home, those who require treatment as walking wounded to first-aid posts, and those who are stretcher cases by ambulance to the casualty clearing hospitals. The personnel of first-aid parties is drawn from already existing members of the St. John Ambulance Brigade or the British Red Cross Society, and from volunteers enrolled and trained in peace time.

First-aid Posts.—First-aid posts are set up in already existing buildings to deal only with walking wounded and those contaminated by persistent gases. They are on a scale of one for every 2.6 square miles (that is, a distance of two miles apart), and their size varies according to the population served. They are staffed by existing members of the St. John Ambulance Brigade or the British Red Cross Society and/or by volunteers enrolled and trained in peace time. It is not intended that any doctors should work at first-aid posts.

Casualty Clearing Hospitals.—Casualty clearing hospitals "should normally be the local hospitals where operating theatres and beds would be available for more serious cases. It is proposed that on a threat of air attack, beds in these hospitals should be freed by the evacuation to outlying hospitals . . . of all patients who can be removed with safety. . . ." (Air Raid Precautions Memorandum No. 1.) "Casualty clearing hospitals should be in the area where casualties are likely to occur" (*idem*). No scale for the provision of casualty clearing hospitals is laid down.

Base Hospitals.—Base hospitals are situated in rural areas or elsewhere out of the danger zone, and their function is to retain casualties evacuated from the casualty clearing hospitals until such time as they are fit to be discharged. The Home Office scheme anticipates that it may be necessary to use buildings other than existing hospitals for this purpose. It also seems to be anticipated that in some cases it will be necessary to combine the functions of casualty clearing hospital and base hospital in the same building.

First-aid Points.—A further unit in the casualty service is the first-aid point, which is a kind of miniature voluntarily supported first-aid post. It is designed for rural areas only.

Discussion of the Present Scheme

In a war of lines the places where casualties may be expected are known and recognized in advance. Casualties may occur anywhere in the line, or along the entire line at one time. In these circumstances it is reasonable to spread the available first-aid forces right along the line—that is, over the entire vulnerable zone—and to evacuate casualties after first-aid treatment down the tree of the classical military casualty clearing organization. This dispersal of available first-aid forces is rendered possible by the relatively small area of the danger zone and the relatively large number of available trained first-aid personnel. It would seem that the A.R.P. casualty organization is to some extent based upon the military model. (First-aid parties = bearer parties; first-aid posts = advanced dressing stations; casualty clearing hospitals = casualty clearing stations.) The first-aid parties are therefore dispersed over the zone where casualties are likely to occur—that is (in London), over the entire area. Conditions, however, are dissimilar in a war of lines and in an air raid, which is a war of areas, because in the former the vulnerable zone is relatively small and is liable to attack not only at any point but at every point simultaneously. In the latter the vulnerable zone is immeasurably larger, and while attack is possible at any point it is impossible at every point simultaneously. As will be shown later, this important difference in attack requires an equally important difference in organization.

It is obvious that any scheme for the clearance of casualties must have as one of its first data the number of casualties anticipated at any one time. The official anticipation has never been published; but various unofficial estimates have been made, varying, for London, from 100,000 per twenty-four hours downwards. It is possible, but unprofitable, to calculate numbers of casualties to be expected. However calculated the figure remains large.

In the event of war densely populated industrial areas would no doubt be the first objects of attack, and taking into consideration the relatively unprotected state of the British population, it is certain that the number of casualties caused by a large-scale air raid would be such as to make it desirable to have arrangements for dealing with very many casualties. It seems to be assumed, and rightly assumed, that no casualty clearing organization, however capacious, is likely to err on the side of being too big.

According to the information published in the L.C.C. statement (*B.M.J. Supplement*, October 15, 1938, p. 248), about 16,000 beds were available for the reception of casualties on October 1 last. The statement does not make it clear whether this includes hospital beds outside the County of London or beds in voluntary hospitals, and is, moreover, difficult to reconcile with the figures given in the *Joint Survey of the Medical and Surgical Services in the County of London*, published by the London County Council and the London Voluntary Hospitals Committee in 1933. In any case, as there is no intention to provide casualty clearing hospitals apart from the existing hospitals the figures given show that economy of hospital beds in the danger zone should be a primary object of the casualty organization. (A further reason for economizing such beds is that every bed in use in the danger zone means that irreplaceable surgical and nursing skill is immobilized in that zone. There is, however, little evidence that this fact has been taken into consideration in the existing scheme.)

Economy can be effected in two ways: (*a*) by carefully refraining from encroaching upon bed space for any extraneous purpose; (*b*) by ensuring that no bed is occupied by a patient who does not require to be treated in that bed, and that no bed is occupied longer than is essential.

If hospital beds are to be economized in the ways indicated there must be careful, efficient, and rapid sorting of casualties into those who require and those who do not require hospital accommodation. There will be many categories of patients; for example:

The trivially injured who can receive first-aid treatment and be sent home.

Those who require slightly more treatment, but can nevertheless go home after perhaps suturing and dressing of a wound.

Those who can be evacuated immediately to base hospitals.

Those who require stretcher treatment before being evacuated.

Those who require immediate operation.

A number of classes of patients who require varying periods of hospital treatment before evacuation.

It has been found in Spain that this sorting should be carried out by the very best surgical skill available and should not be left to the junior surgeon or, vastly worse, to the semi-skilled first-aid man. Moreover, this work does not only require surgical skill: it cannot be carried out unless there is adequate floor space: if attempts are made to do it in the out-patient department of a hospital, crowded to overflowing with walking wounded, confusion will arise and many patients will be sent to the wards unnecessarily. Thus wastage of hospital beds will occur and a serious bottle-neck will develop in the stream of evacuation. Hospital out-patient departments are, however, the only places at present available for carrying out this sorting; further accommodation cannot be made available without encroaching upon bed space, which is already on the small side. (The fact that many hospitals have no out-patient departments and therefore may have to encroach upon their bed space to provide room for the sorting of casualties does not weaken the argument, but rather strengthens it.) It is obvious that the inflow of walking wounded to casualty clearing hospitals should be reduced to the lowest possible level, and it is for this purpose that the first-aid post was designed. It is intended to act as a shield to the casualty clearing hospital, to protect the out-patient department from just such an inflow of walking wounded. Its purpose is to deal with the trivially injured only, and it therefore would have no medical man on its staff.

Criticism

Within the limitations imposed by general A.R.P. policy the official casualty clearing scheme is a good one, and meets the various problems involved as well as they can be met *within those limitations*. Nevertheless certain criticisms must be advanced.

FIRST-AID PARTIES

The first-aid parties have to decide which patients shall go to casualty clearing hospitals, which shall go to first-aid posts, and which may go home after first-aid treatment on the spot. Quite apart from the fact that it is questionable whether enough St. John Ambulance men are obtainable to staff the first-aid parties in the numbers required, it is certain that men of their standard of training, with the best will in the world, are not competent to carry out such very difficult work. To allow them to attempt it would lead to confusion. Moreover, it must be questioned whether their training, which is directed primarily to peace-time first aid, is such as to suit them for the incomparably more difficult circumstances which would exist during an air raid.

FIRST-AID POSTS

Casualties having arrived at the first-aid post, the task of deciding who should go home after treatment and who should be sent to the casualty clearing hospital would fall upon the staff of the post, who would here also seem to be quite unsuited to such work.

There is, moreover, a serious psychological objection to the first-aid post as at present conceived. It is intended that first-aid posts should be situated, so far as possible, in existing buildings taken over in time of threatened emergency and altered so as to enable them to carry out their war-time function. It should be noted that these will be buildings with a peace-time function; public baths, schools, sports pavilions, etc., are in fact suggested as suitable. The buildings will be familiar to the public as baths, schools, and so on; they will not be familiar as places where first-aid treatment can be obtained. It is doubtful whether any system of notices and placarding would, under war conditions, be sufficient to cause the large numbers of walking wounded to go to a building they know to be a school, and to refrain from flocking to a building which they know well as a hospital. Even if the hospital were at a considerable distance many people would still find their way there. They would crowd into the general practitioners' surgeries; and, in fact, the first-aid post organization would break down. This is, to my mind, an almost insuperable objection to the improvisation of fixed first-aid posts in already existing buildings, apart from hospitals.

CASUALTY CLEARING HOSPITALS

The casualty clearing hospital has a double purpose: first, to provide treatment for those stretcher cases which cannot be immediately moved to base hospitals; secondly, to carry out the important and difficult work of sorting casualties. In addition to these functions, it seems certain that under the present scheme it would be forced to deal with *all* types of casualties: walking wounded could only

be excluded at the point of a machine-gun. It is, as has been pointed out above, improbable that all this work could be carried on in the existing accommodation.

It seems to be intended that the bulk of the surgical and nursing skill of the country should be immobilized in the casualty clearing hospitals in the vulnerable zone. So far as is known, there is no arrangement for moving surgical or nursing staff from one casualty clearing hospital to another at short notice. Therefore, owing to the fact that each attack could be delivered against only a relatively small part of any one area, the majority of these skilled people would be idle for a large part of the time, a few of them would be grossly overworked, and all would be exposed to a very high risk, as there is no reason to suppose that hospitals would be more free from bombing than any other buildings. This is a serious objection to the casualty clearing hospital, because surgeons and nurses take a long time to train and are very valuable people, not only from the humanitarian point of view but as units in the national defence. While the main brunt of the enemy attack is being borne by the civilian population, a surgical team is more valuable for the preservation of morale than a division of infantry. To expose that team to danger unnecessarily or to leave it idle is inexcusable.

MOBILITY

As has been stated above, in any area such as London the attack could be delivered at any one time against only a relatively small part. The rest of the area would have few, if any, casualties to deal with. The number of casualties in the damaged region, however, might very well be overwhelming, and such as imperatively to demand that assistance be given by forces from undamaged places. If 116 bombs were dropped on London, it is, to say the least of it, unreasonable to suppose that four would be dropped in each of the twenty-nine boroughs; it is, in fact, probable that all would fall in a relatively small area. Under the present scheme the only assistance that could be sent to a damaged area would be first-aid parties (and possibly ambulances), whereas what would urgently be required would be surgical teams and surgical accommodation—that is, theatres, sorting- or clearing-room accommodation, dressing-station accommodation, etc.

AMBULANCES

Statements on the organization of ambulances are very difficult to come by. The A.R.P. (London) Order, dated March 21, 1938, laid down that responsibility for ambulance services rests with the London County Council. It is understood that it is proposed to run the ambulance organization on the same lines as the present peace-time ambulance service.

All ambulances will be centrally controlled through the headquarters of the ambulance service at County Hall, and demands for ambulances will be forwarded to County Hall and met from there by the transmission of orders to the outlying ambulance depots and stations. All classes of ambulances will be controlled in the same way. I understand that the ambulances already existing in the administrative county of London are approximately: 153 London County Council ambulances, most of which would take four stretchers; twenty ambulance omnibuses; sixteen ambulances belonging to the voluntary aid organizations; seventy children's ambulance omnibuses; and a few ambulances belonging to hospitals. There are therefore ambulance places for approximately 1,400 stretchers, about half of which are in omnibuses. I understand that it is also intended in emergency to convert Green Line buses (up to a maximum of 400) to act as ambulances.

If the question of ambulances is considered as a whole, it will be seen that two essentially dissimilar functions have to be carried out. First, peace-time patients have to be evacuated from casualty clearing hospitals to hospitals outside the danger area; and air raid casualties, when they have been given urgent treatment in casualty clearing hospitals, have also to be evacuated. Secondly, casualties have to be collected from the places where they have occurred and brought to the casualty clearing hospitals. If the two types of service are considered as a collecting service and an evacuating service around the focal point of the casualty clearing hospital, the points of dissimilarity will become obvious.

Collecting Service	*Evacuating Service*
Immediate and continuous local availability essential.	Demand intermittent. Times can be arranged in advance.
Short journeys.	Long journeys.
Many light vehicles of maximum manœuvrability essential. Heavy vehicles useless.	Large vehicles preferable. Comfort of primary importance. Manœuvrability of vehicles not important.
Small area of operation.	Large area of operation.
Provision for rapid and direct control essential, unhampered by intermediaries.	Prearranged working, eliminating need for hasty communication.
Vehicles which can be manhandled over obstructions a great advantage.	Vehicles which can be manhandled over obstructions of little advantage.

It would seem from the above that ambulance omnibuses and Green Line buses are quite unsuited to the collecting service, and that even the present London Ambulance Service ambulances might be difficult to handle under air-raid conditions when roads were blocked. A.R.P. Memorandum No. 1 states that it may be necessary to adapt peace-time vehicles for the carriage of stretchers, and a recent publication gives details for the modification of a 10 to 15 cwt. tradesman's delivery van to carry four stretchers. In the modified van, however, there is no room for an attendant, and the four patients are carried on stretchers which project a variable distance from the back of the van. This is a possible but undesirable solution of the problem. No other solution has, however, been offered, though it is certain that extra ambulances will have to be found, as the figures given in A.R.P. Memorandum No. 1 show that the County of London will require, for the collecting service alone, ambulance places for 4,800 to 6,080 stretchers, and the total ambulance places (in small ambulances) do not, at present, exceed about 700.

It may safely be said that the existing organization, while eminently suitable for the evacuating service and for peace-time purposes, might lead to serious difficulties with the collecting service under air raid conditions. An example of the confusion and delay which might result from an attempt to work the present system might be somewhat as follows:

A major air raid takes place in London and causes among other things an utter breakdown in the telephone service, considerable street damage in the North London area, damage to some of the London bridges, and a large number of casualties in a North London borough. First-aid parties are summoned by runner from their depots, and the medical officer of health is informed, also by runner. The M.O.H., requiring, say, 100 ambulances, sends a messenger on a motor cycle to County Hall to ask for them. The messenger may or may not arrive. If he does, a number of vehicles, perhaps Green Line buses, will attempt to proceed to the borough in question, and may succeed in negotiating streets blocked with the debris of fallen buildings. They may make contact with the first-aid parties, and with the casualties, many of whom, after a delay of some hours at least, will be already dead. Having taken up the casualties the Green Line buses may or may not find it possible to get to the casualty clearing hospital. A very moderate degree of road-blocking will suffice to baulk them completely.

This is admittedly very nearly a maximum degree of breakdown, and it is unlikely that the system would fail quite so dismally. It is, however, equally unlikely that it would meet with any reasonable measure of success. This fact is apparent to any person who is familiar with the difficulties of communication in time of stress, even when it is carried on by people who are trained in the highly technical art of drafting, conveying, and understanding messages.

It was said above that the official scheme for casualty clearance was the best possible within the limitations of

the general A.R.P. scheme. It would seem that the same cannot be said for the organization of the ambulance service for London.

Suggested Scheme

London would be divided into a number of areas, perhaps five (see Sir Frederick Menzies's letter to the *Journal*, October 22, 1938, p. 860). Each of these areas should, for all casualty service purposes, be controlled by one man, and the all-London area should, in its turn, be controlled by a superior officer. Each area would contain a number of casualty clearing hospitals in its danger zone, and each of these casualty clearing hospitals would work with a base hospital outside the danger zone. Co-operation between the casualty clearing hospital and its base hospital would be very close, and staffing and administration of the two hospitals would be, to a large extent, common. The casualty clearing hospital would, in fact, be a mere extension of the base hospital into the danger area. Each of the five areas would have an ambulance service composed of ambulance trailers. (This vehicle has been designed and the prototype is now in existence: it will be described later.) Each hospital unit would be equipped with one or more mobile surgical units of the type which has to some extent been used in Spain. The mobile surgical unit would have a dual function. First, it would be equipped, and be competent to proceed to the scene of the bomb damage and to deal with casualties on the spot. Secondly, it would be available to be moved at short notice to another area, where it could supplement the surgical staff of a casualty clearing hospital, or indeed supplement the work there of the mobile surgical units. These mobile surgical units should take over the work which is at present detailed to the first-aid parties and the first-aid posts. First-aid posts should not be set up in buildings apart from hospitals, though, where possible, additional accommodation in buildings beside hospitals should be taken over for the treatment of walking wounded. First-aid parties should be relegated to the only duties they are competent for—namely, that of stretcher bearers and dressers. The suggested scheme, as it concerns casualty clearance, would work out in slightly more detail as follows:

CASUALTY CLEARING HOSPITAL

Congestion in the casualty clearing hospital would be to a great extent relieved, since most of the sorting would be done by the mobile surgical unit. Much of the work of dealing with walking wounded would also be done by that unit; but it is important to remember that many walking wounded would find their way to hospital, no matter what scheme was in operation, and many would have to return for dressings and other out-patient treatment. It would therefore be necessary to have as large an out-patient department as possible.

MOBILE SURGICAL UNIT

As already stated, the function of this unit is dual: first, to leave its hospital and work as a detached unit; and, secondly, to supplement the resources of another hospital.

With regard to the function of the unit when working on its own, I do not suggest that it should undertake major surgical procedures, except in cases of dire necessity. The unit should act as a clearing and sorting unit, and treat only such injuries as can safely be dealt with on the spot. What injuries could be dealt with and what injuries would have to be sent to the casualty clearing hospital for treatment would largely depend upon the exact type of mobile unit established; there are a number of models which could be copied. The unit could be entirely mobile—that is, it could take its accommodation with it in a pantechnicon or a converted bus, or in some such vehicle as the "mobile surgical trailer" described below. Alternatively, it could convey its equipment in a lorry and depend upon finding some suitable room near at hand for rapid improvisation as a theatre or dressing station. The completely mobile type is bound to be hampered by the restricted space available, and the semi-mobile type by delay in getting into action; and there is the possible difficulty of finding suitable rooms near by. I believe that the surgical trailer described below offers the maximum amount of mobility and the best possible accommodation which can be made mobile.

The mobile unit on being called out would proceed with its staff (surgeon, assistant, anaesthetist, nurses, and team of stretcher-bearer-dressers), and its ambulance trailers, from the hospital to the point nearest to the scene of damage. Its site of operation, if gas had been used, would of course be up-wind from the gassed area. Having started work in its surgical trailer (or set up a clearing station in a near-by building), it would proceed to examine and treat casualties and dispatch them to their appropriate destinations. Casualties would be accurately labelled with their degree of severity, their destination, and the treatment given before dispatch. The officer in command of the unit would before leaving his hospital be fully informed of the state of its bed accommodation and that of its affiliated base hospital, and also of the accommodation in near-by hospitals. He would then be in a position to dispose of his patients to the best advantage. The team of stretcher bearers and dressers would deal with minor casualties, and the surgical team with such casualties as demanded their immediate attention.

When moving out to supplement the resources of another hospital the mobile unit, having its own staff and its ambulance trailers, could help the mobile units of the distant hospital in the open, or could proceed to the hospital and there set up its own surgical unit; or it could, of course, use any available accommodation in the hospital building. It seems unlikely that any hospital would have working space for more surgical teams than it controlled, and it is therefore probable that the mobile hospital coming to help would either have to use its own vehicle or commandeer space in a near-by building.

AMBULANCES

In the suggested scheme there would be two ambulance services: (1) A long-distance service equipped with comfortable vehicles and controlled by the all-London authority or some authority operating on an even wider area. Its function would be to evacuate peace-time patients from the hospitals and to carry out long-distance evacuation of such air raid casualties as required a long stay in hospital. For this service the present peace-time ambulances, supplemented by omnibuses, are suitable by reason of their comfort and speed. (2) A short-distance service composed of ambulance trailers and taking patients from the mobile surgical units to the casualty clearing hospitals or to the base hospitals, and also evacuating patients from the casualty clearing hospitals to the base hospitals.

The ambulance trailers would be based on the casualty clearing hospitals, and would be controlled by the area authority acting through the casualty clearing hospital. There would have to be a sufficient reserve of these trailers at the casualty clearing hospital for the demands of evacuation to the base hospital and those of the mobile surgical units to be met simultaneously, should the need arise. The reasons why the ambulance trailer is considered to be the ideal vehicle for this service are set out below.

PERSONNEL

Allocation of surgical and nursing personnel would be made in detail in peace time, and every person would be thoroughly familiar with the part he or she would be expected to play in the organization. This would necessitate some training, which for people below a certain income level would be carried out on a paid basis.

Stretcher bearers and dressers will not be available in sufficient numbers (although not nearly as many would be

required as by the present scheme) unless they are enrolled and trained in peace time. The training would, however, be much more extensive than is at present given to first-aid volunteers, and would include periods of work in the casualty departments of hospitals and with the London Ambulance Service, and suitable refresher courses. It is not reasonable to expect men to undergo such training without adequate payment.

Ambulance Trailer

This is a vehicle which can be towed behind an ordinary 10-h.p. motor-car. It is partly collapsible and, being constructed of aluminium alloy, is very light, weighing about 500 lb. Its dimensions are: *Closed*—length, 13 ft. 10 in.; width, 2 ft. 4 in.; height overall, 5 ft. 8 in.

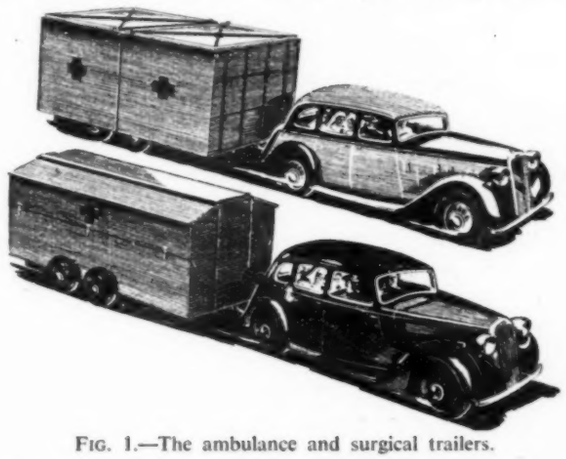

FIG. 1.—The ambulance and surgical trailers.

Open—length, 13 ft. 10 in.; width, 6 ft. 4 in.; height overall, 6 ft. 8 in.; head room, 5 ft. 8 in. The approximate cost is about £200 to £300.

The trailer is preferred to any other type of ambulance because of:

1. *Mobility.*—It can be manhandled easily over any obstruction that its towing motor-car can negotiate or be manhandled over. Should the necessity arise it can be taken from its bogie, the patients removed, the body of the trailer carried over the obstruction by four men, then replaced on its bogie, the patients put back, and the nearest motor-car commandeered to tow it. No other type of ambulance could pass such an obstacle.

2. *Comfort.*—Tradesmen's vans fitted with stretcher racks would be very uncomfortable, if not dangerous, as the stretcher (and the patient) would project from the back of the van.

3. *Capacity.*—The trailer carries twelve stretchers, the converted van and the peace-time ambulance only four. The converted bus and the ambulance bus are so clumsy and unmanœuvrable as to be useless on damaged roads obstructed by fallen buildings.

4. *Cost.*—The only ambulance that can compare with the trailer in cost is the converted van, which is (*a*) dangerous, and (*b*) might not be available in sufficient numbers after the demands of the fighting forces had been met. There are sure to be plenty of private cars available for towing, and their removal from private ownership would be an advantage in that it would decrease congestion on the roads.

5. *Storage Space.*—The trailer is so constructed that when not in use it collapses to a relatively small size and can be stored easily. It does not require maintenance in storage.

The Surgical Trailer

The inventor of this unit has named it "a mobile hospital trailer." I prefer the name given. This vehicle can be towed behind an ordinary 10-h.p. motor-car. It measures: *Closed for transport*—length, 13 ft. 10 in.;

FIG. 2.—The mobile hospital unit in action.

width, 7 ft. 6 in.; height overall, 7 ft. 6 in. *Open for service*—length, 29 ft. 0 in.; width, 11 ft. 0 in.; height overall, 7 ft. 6 in.; head room, 6 ft. 6 in. The approximate cost is about £800 to £900, plus equipment.

It might be imagined from the above dimensions that a long time would be required to open the unit for service; such is not the case, as it can, in fact, be fully opened for use in approximately one minute. It is entirely constructed in aluminium alloy, and has no canvas walls or joints.

Reasons of space prevent a full description of the unit being given, but it may be said that it provides twelve stretcher places, sitting accommodation for twelve, a room 7 ft. 2 in. by 11 ft., fitted with an operating table and all the essential equipment of a theatre, and a somewhat smaller room adequately equipped to deal with lesser injuries. There is adequate cupboard space for dressings and equipment, sterilizing equipment, twenty gallons of sterilized water, etc. The unit carries its own lighting and central heating arrangements. A modified form of the unit gives a central room 31 ft. by 7 ft., with thirty stretcher places arranged round it. This might in some circumstances be a preferable pattern.

Opinions may vary as to the practicability of such a vehicle as is described above. I have, however, been privileged to see the prototype in process of construction, and I am convinced that it is thoroughly practicable and the best possible answer to the problem of the mobile surgical unit.

Both the ambulance trailer and the surgical trailer are the design and property of London Laboratories, 45–49, Cambridge Road, Kingston-on-Thames, to whom I am indebted for the opportunity of viewing the models and the prototypes.

Conclusion

I realize that the scheme described above is very sketchy—a mere outline. Many important matters have not been mentioned, principally the bomb-proofing and protection of hospital buildings. Little mention has been made of gas and decontamination.

Let me say, in conclusion, that I am of the opinion that the best way to deal with casualties in air raids is by prophylaxis. An efficient and carefully organized system of shelters and evacuation would do much to reduce the necessity for a casualty organization.

Summary

The official scheme for casualty clearance in air raids is outlined and discussed.

Certain criticisms of the scheme are offered.

A modified scheme is suggested.

An ambulance trailer and surgical trailer are described.

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It has been suggested that the British Medical Association should establish a central medical film library from which Divisions and Branches could borrow films to show at some of their meetings. The Council at its last meeting decided to inaugurate such a library, which it thought should prove of great value to the profession. The Council believes that many medical practitioners who make films of medical interest would like to help in the building up of the library, and it therefore invites members who have made, or who make in the future, films of a kind suitable for showing at Division or Branch Meetings to send a copy to the Secretary.

AIR RAID REHEARSAL AT A MENTAL HOSPITAL

BY

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Leavesden (L.C.C.) Hospital is situated within a few miles of the borough of Watford, the main L.M.S. railway line to the North, and two important arterial roads. Two aerodromes and the North London suburbs are only eight miles distant. Of the 2,600 inmates, roughly 2,000 are mental defectives and the remainder elderly psychotics. The vast majority of the defectives are of low grade, and as many as 1,200 are sick, crippled, or infirm.

In the event of war it is apparent that such a locality might present an important military objective to the enemy in addition to being the periphery of the battle area in which our defending air and ground forces would attempt to intercept and engage hostile aircraft attacking London. Appreciating the vulnerability of our strategic position, participation in the Hertfordshire A.R.P. exercise on November 5 was welcomed as an opportunity for testing the hospital A.R.P. organization and providing practical training for personnel under a semblance of war conditions.

The exercise was timed to commence at 23.45 hours on November 5, and to end at 02.30 hours next morning. It was presumed that at noon on the 5th the Government had declared "A State of National Emergency," and had issued urgent instructions to all local authorities to expedite the completion of their A.R.P. organizations and had warned them of the probability of hostile air raids.

At the request of the Area A.R.P. Officer the hospital was organized as a district unit. This scheme involved the establishment of facilities for the receipt of code messages, arrangements for the rapid "blacking out" of lighting systems, the creation of "incidents" to test squads on duty, and a method of umpiring to determine the degree of efficiency attained by personnel.

Almost all the staff volunteered their services, but, for reasons of economy, it was decided to bring only a skeleton but fully representative cadre of the hospital A.R.P. services into action, and to assume that certain other steps regarding the warding of patients had been carried out. It was also decided to cut off all electric lighting and gas supplies centrally for the period of the exercise rather than attempt to obscure lights showing externally.

General Defensive Scheme

Our general defensive scheme is based on the supposition that splinters from our own guns and high explosive bombs from enemy aircraft are likely to constitute our most formidable menace. It is not thought that a semi-urban area such as Leavesden would be as much exposed to the risk of attack by gas and incendiary bombs as more thickly populated centres. Our plan is therefore to evacuate upper floor wards and, where possible, use trenches as a means of protection.

Accordingly for the purposes of this rehearsal it was assumed that upper floor wards in most of the three-story blocks were the dining and day rooms of patients whose sleeping accommodation was provided on the ground-floor level. Sick, infirm, and crippled patients, incapable of rapid evacuation, were presumed to be permanently warded on the middle floors. The most active types of patient in other wards and blocks were "earmarked" for evacuation into trenches.

Preparations for the Exercise

All staff, whether on ordinary night or special A.R.P. duty, were equipped with G.S. or C.D. respirators. Written instructions were issued detailing the precise duties of all personnel. Whistles, electric torches, and special A.R.P. forms (published

by H.M. Stationery Office) were supplied where necessary. Full protective clothing and equipment were issued to the decontamination squad and its reserves. Partial protective clothing was provided for the first-aid personnel. The patients in certain male and female wards were issued with civilian type respirators and drilled in their use. One hundred and fifty male patients were exercised, both by day and by night, in evacuating their wards and occupying a trench while wearing respirators. The verges of important roads and pathways were marked out with paint. Hurricane lamps were installed in all parts of the hospital. The windows of important centres were obscured with paint or curtains, and appropriate equipment was supplied to all departments of A.R.P. services. Two first-aid posts were prepared. In the male post, by a simple modification, the electrically powered carding machine was adapted into a means of "cleansing" the air of the undressing room. A decontamination centre was also improvised, and served as a headquarters for the squad, reserves, equipment, and motor lorry.

The District Control Room was equipped with three automatic type telephones, two for incoming and one for outgoing calls. The Post Office telephone was used to maintain contact with Area Headquarters, and a large-scale map of the hospital and estate was fitted with distinctive miniature flags which served to indicate the position of incidents, squads, and parties during the exercise.

Posting of Personnel

DISTRICT CONTROL ROOM. The District Controller (the Medical Superintendent). 1 Clerk. 3 Telephonists. 3 Runners.

4 Chief Air Wardens (for main hospital divisions)
15 Air Wardens (for blocks of wards)
19 Runners (one attached to each warden)
2 Observers (stationed in water tower)

First-aid Posts
2 Medical Officers
16 Nurses

First-aid Parties
6 Male Nurses
6 Female Nurses

Auxiliary Fire Parties
9 Men

Trench and Reserve Staff
7 Nurses

Operating Theatre
1 Assistant Matron
2 Nurses

Decontamination Centre	*Fire Brigade*	*Rescue and Demolition Party*
1 Foreman	1 Captain	1 Foreman
5 Men	10 Men	5 Men
3 Reserves		
1 Lorry Driver		

Umpires .. 4 Medical and 4 Technical

Grand Total 132

The Exercise

At 23.00 hours on November 5 a conference in the District Control Room was attended by the District Controller and the eight umpires. Watches were synchronized and each umpire was issued with written instructions of the incidents for which he was to be responsible. He was also handed fireworks to be ignited at the scene of each incident, a whistle, an electric torch, and a special form on which to note his observations. To medical umpires, red labels to denote injuries and yellow to indicate contamination, were also supplied. These labels were to be attached to the clothing of presumed casualties.

At 23.47 hours a code message from Area Headquarters signalled the commencement of the exercise. For two minutes the hospital siren sounded a "warbling note" and at 23.55 hours all electric lighting and gas supplies were reported as "cut off."

In all, fourteen incidents had been devised. They covered in their scope all possible war emergencies, and included such imaginary catastrophies as attack by high explosive, incendiary and gas bombs. Possible sequelae such as panic and an influx of casualties from outside the hospital were not forgotten.

The method of staging incidents was as follows: The umpire at the prearranged time and place ignited fireworks and sounded blasts on a whistle to summon the warden responsible for the area in question. When the warden arrived he was informed of what was presumed to have occurred—for example: "A high explosive bomb fell here and the resultant blast rendered the north aspect walls of Block A unsafe"; or "A gas shell exploded at the entrance of this ward and patients A., B., and C. have been contaminated with liquid gas smelling like geraniums."

Thereafter the warden took charge and was expected to report all relevant details to the District Control. He was also responsible for the sounding of the gas alarm by means of a rattle and taking any other action the situation warranted. Orders issued by the District Control (on special A.R.P. forms) largely depended on the accuracy and judgment with which the warden made his report. The umpire took no further part in the incident save to observe and note the deportment, degree of technical efficiency, and expedition of all personnel engaged.

On receipt of a further code message, "Raiders passed," from Area Headquarters shortly after 02.30 hours a continuous two-minutes blast on the siren signalled the close of the exercise.

Commentary

The following observations are based on an analysis of report and message forms handed in at the end of the exercise. Points of purely local interest have been excluded.

(1) ORGANIZATION

The District Unit.—This scheme of organization may seem unduly elaborate, but it has the merit of flexibility. Furthermore, a self-sufficient scheme is essential for hospitals administratively isolated from neighbouring local authorities.

The District Control.—A District Control is vital if personnel and equipment are to be used to the best advantage. In a real emergency there may be a shortage of both, and for this reason the vesting of authority in wardens to call A.R.P. units directly into action would probably be both impracticable and uneconomical in the use of both personnel and equipment. Well-organized communications are essential for the successful functioning of the District Control. During the exercise it was found that the hospital automatic telephones failed intermittently. This was due partly to the unusual demands made on the system and partly to a gradual voltage drop in the batteries resulting from the switching off of the electric lighting system. It is therefore suggested that telephone and fire-bell systems should be charged from a self-contained power unit rather than from lighting mains. In the event of their failure, runners, properly coached regarding the positions of squads and posts, should be available.

"*Blacking Out.*"—Failing the completion of methods for obscuring all windows, doorways, etc., by paint, curtains, or other means, the cutting off of light and gas supplies at the mains is the only practicable alternative. The precautions necessary as regards gas are obvious, but unless main electric lighting switches are in convenient central positions delay is inevitable. The importance of the immediate and complete obscuring of all lighting visible from without has been repeatedly stressed by the authorities. Hurricane lamps dimmed by the external application of blue paint were found to be adequate in wards and corridors; but for the illumination of important centres incandescent oil lamps are desirable. In the operating theatre and first-aid posts, where naked flames are dangerous, emergency electric lighting plant must be considered essential. Whitewash was found to be less conspicuous than yellow distemper in marking out the boundaries of roads, paths, and routes of evacuation.

First-aid Posts.—Small posts with narrow, tortuous passage ways are undesirable. The posting of staff, experienced in the technique of carrying out eye irrigations, to the washing and bleaching rooms proved a valuable aid to efficiency. The sound of running water from aid-post ablution sprays rendered staff wearing respirators quite inaudible. Some alternative to oral instructions would be useful under such conditions. A staff of eight sufficed to undress, wash, decontaminate, and re-dress a batch of patients in less than twenty minutes without

undue exertion. If more than six casualties had to be dealt with at the same time additional personnel would be needed to act as store-keepers and clerks and to maintain discipline.

Evacuation into Trenches.—Evacuation into trenches was very successfully performed, and further rehearsals would no doubt reduce the time taken. After a week's training one hundred middle- and high-grade male patients of sound physique, in spite of the commotion and excitement attendant on the creation of the incident in which they were concerned, were completely evacuated from a three-story block of wards and were conducted to and occupied a trench in less than twenty minutes. Eleven of those minutes were spent in dressing, putting on respirators, and evacuating all three floors by different routes. The 300 yards' march to the trench took four minutes and its actual occupation just less than five minutes. Such an exercise cannot be practised too frequently by patients and those in charge of them, but care in selection must be exercised. One feeble, tottering, or recalcitrant patient might delay all the others, and speed is vital in such an operation. Marching in single file along previously marked routes, each patient holding the clothing of the man or woman in front, seems the best procedure. Although the 84 yards of trench covered with corrugated iron had a somewhat forbidding appearance, no apprehension was displayed and, by careful posting of staff, the uniform distribution of the patients in the bays was accomplished without incident.

To achieve smooth co-ordination it is apparent that practice is needed over a prolonged period, and from this it follows that the construction of trenches should not be delayed until an actual emergency arises. Obviously, too, if this form of protection can be made available for the more active type of patient during the hours of darkness it should be possible in daylight raids to protect an even larger number by this means, including some of those less active physically.

The criticism has been offered that air raids might be almost continuous, with the consequence that patients might have to spend long periods in trenches or be constantly engaged in running to and from them. Such a possibility must be envisaged, but it is also possible that a major catastrophe might present a problem which could only be solved by the evacuation of wards into an adequate and conveniently situated trench system. For those who can take advantage of them, trenches constitute an excellent method of protection, particularly against explosives and splinter. They conform to the principle of dispersal, and are, by using "patient" labour, relatively cheap to excavate and render semi-permanent.

(2) EQUIPMENT

The careful placing of supplies of sand, water reservoirs (independent of mains supplies), and the provision of portable stirrup-type hand pumps are all points that require consideration. In this exercise the decontamination squad found that shorter 2½-inch bore hose lengths would have been more convenient than the standard 100-feet lengths available for attachment to hydrants located out of doors. Cheap and easily decontaminated stretchers of metallic construction are advisable for the use of first-aid parties, whereas wooden stretchers are adequate where the problem of contamination does not arise.

Respirators (Staff).—C.D. or G.S. respirators should be available to all staff on duty. The issue of civilian type respirators to A.R.P. personnel leads to invidious comparisons with those more efficiently equipped, and in real emergency would probably impair morale. In the course of the exercise it was found that inexperience in the use of anti-dim preparation, general unfamiliarity with the prolonged use of respirators, and, in the case of female personnel, coiffures ill adapted to respirator head-harness, all impaired efficiency. Incidentally, it is worthy of note that it is practically impossible to use an ordinary desk telephone fitted with a hand microphone while wearing a C.D. respirator.

Respirators (Patients).—Prior to the rehearsal one hundred and fifty male and fifty female patients practised respirator drill. With further training it is probable that a surprisingly high proportion of patients will be capable of putting on and using their respirators effectively. This will leave staff free to deal with the lower-grade aments who are incapable of doing so.

(3) PERSONNEL

Nursing staff of both sexes were employed as wardens and as members of first-aid parties. They were, without exception, energetic and keen, but in many instances it was apparent that female staff were physically and temperamentally unfitted for such duties. The truth of the adage that an ounce of practice is worth a ton of theory was clearly demonstrated in this exercise. Lectures on the theory of A.R.P. are of little value unless supplemented by frequent practice. It is unlikely that a depleted war-time staff could man all posts fully, so it is obviously necessary to train personnel now, in this period of armed truce, in as many spheres of A.R.P. work as practicable so that departments needed in any particular emergency could be brought up to full strength from the staff available at the time. Comprehensive as well as specialized training is therefore the best means of attaining this end.

(4) UMPIRING

The method employed during this exercise has been described, but in practice there was a failure on the part of the wardens to grasp the full import of verbal accounts of incidents. In consequence reports to the District Control were often incomplete and faulty. It is suggested that in future rehearsals umpires should hand written accounts of each incident to the warden concerned, who, in turn, would be required to complete his report form prior to communicating by telephone to the Control Room.

Conclusions

This air raid rehearsal helped to define our local A.R.P. problems and indicate the steps necessary for their solution. It therefore achieved its implicit purpose.

What can be done and much of what still remains to be done is apparent, but I cannot too strongly emphasize that such an exercise is only a dramatized method of training, and the results obtained are in many cases as fictitious as the incidents which preceded them. Such a test is in no sense infallible. It ignores the reactions of the individual to actual war conditions, and does little to appraise the adequacy of matériel in face of blast, splinter, and other contingencies. Nevertheless it stimulates all who have volunteered for this vital service in A.R.P. activities to further effort. It provides a practical test of the work already done, and has an enormous propagandist value against both defeatism and procrastination.

List of Incidents

Incident No. 1.—Time : Midnight. Type of Attack : H.E.

Target and results : Bomb bursts on ground in front of Block 14. Casualties : Three patients on ground-floor level, one with fractured spine. Telephone wire cut.

Services Required	*A.R.W. Post*	*Umpires*
A.R. Warden First-Aid Party	4	Engineer
Electrician		Medical

Incident No. 2.—Time : 00.15 Hours. Type of Attack : Incendiary.

Five incendiary bombs fall in airing garden of Ward 6. No damage. No casualties.

Services Required	*A.R.W. Post*	*Umpires*
A.R. Warden	2	Engineer
No. 1 Fire Party		

Incident No. 3.—Time : 00.30 Hours. Type of Attack : H.E.

Extensive damage to roof of Ward 5B. (It is assumed that this ward is unoccupied by night.) Action : Evacuation of patients on middle floor to ground floor. One casualty. Patients return 00.45.

Services Required	*A.R.W. Post*	*Umpires*
A.R. Warden	2	Medical
Reserve Night Nurses		Nursing : Matron
First-Aid Party		

Incident No. 4.—Time : 00.45 Hours. Type of Attack : Incendiary

Annexe ladder store near boiler house. Small fire only.

Services Required	*A.R.W. Post*	*Umpires*
A.R. Warden Fire Party	Annexe	Engineer

Incident No. 5.—Time : 00.50 Hours. Type of Attack : Gas Bombs.

Bombs have fallen on road opposite laundry drying ground and heavy contamination of ground has taken place. Blast has broken windows on N. aspect of Ward 15. Casualties : Three patients in Ward 15 gassed and wounded with broken glass—one a stretcher case.
Action : Evacuation of patients to Ward 9.

Services Required	*A.R.W. Post*	*Umpires*
A.R. Warden First-Aid Party Decontamination Squad Rescue and Demolition		General (L.A.G.S. Instructor) Engineer Medical

Incident No. 6.—Time : 01.00 Hours. Type of Attack : Aeroplane Crash.

Aeroplane of unknown nationality crashes in flames on farm buildings. Large fire. One cow breaks a leg.

Services Required	*A.R.W. Post*	*Umpires*
A.R. Warden Fire Brigade		Engineer

Incident No. 7.—Time : 01.20 Hours. Type of Attack : H.E. and Gas Bombs.

H.E. and Lewisite penetrates roof of 12B. Casualties : Five patients contaminated with Lewisite, of whom two are wounded. Suspected contamination : Ten cases, one patient dead.
Action : Evacuation to trenches of patients in 12, 12A, and 12B. Return to wards 1.50 a.m.

Services Required	*A.R.W. Post*	*Umpires*
A.R. Warden First-Aid Party Reserve Nurses	4	General (L.A.G.S. Instructor)

Incident No. 8.—Time : 01.40 Hours. Type of Attack : H.E.

Further fall of H.E. near Block 12. Walls of No.12 Ward show cracks.

Services Required	*A.R.W. Post*	*Umpires*
A.R. Warden Demolition and Rescue Party	4	Engineer

Incident No. 9.—Time : 01.50 Hours. Type of Attack : Gas Bombs.

Phosgene bomb explodes in entrance to trench. Three patients gassed through removing respirators, two others sustained burns of hands.

Services Required	*A.R.W. Post*	*Umpires*
A.R. Warden First-Aid Party	3	Medical

Incident No. 10.—Time : 01.50 Hours. Type of Attack : Gas Bombs.

Gas bombs fall in kitchen garden.

Services Required	*A.R.W. Post*	*Umpires*
A.R. Warden Decontamination Squad	4	General (L.A.G.S. Instructor)

Incident No. 11.—Time : 02.00 Hours. Type of Attack : Gas Bombs (Arsenical Smoke).

Bomb containing nasal irritant gas falls in front of Centre Block. Two escaped female patients hiding in bushes are gassed and maniacal.

Services Required	*A.R.W. Post*	*Umpires*
Warden First-Aid Pariy	1	Medical

Incident No. 12.—Time : 02.10 Hours. Type of Attack : H.E.

Damage to carpenter's shop and coal store. Two Scout runners suffer concussion through blast.

Services Required	*A.R.W. Post*	*Umpires*
Warden Demolition Party First-Aid Party	2	Engineer Medical

Incident No. 13.—Time : 02.20 Hours. Type of Attack : H.E.

Unexploded bomb drops near water tower.

Services Required	*A.R.W. Post*	*Umpires*
Warden Demolition Party	1	Engineer

Incident No. 14.—Time : 02.25 Hours.

Twenty civilians from outside arrive at gate porter's lodge clamouring for admission. Several wounded.

(Exercise closed at 02.30 hours.)

In conclusion, I wish to thank Dr. R. M. Stewart, my medical superintendent, for his helpful criticism in compiling this report; the enthusiastic A.R.P. workers who participated in the exercise; and Colonel A. S. Goad, Area A.R.P. Officer, Watford, for his kind co-operation both before and during the rehearsal.

CONFERENCE ON SAFE MILK

A public conference on milk supply as a social service was held in Edinburgh recently under the chairmanship of Canon C. H. Ritchie. Mr. J. Vallance of the Chamber of Agriculture for Scotland said that if the price of milk to the public was to be reduced it could only be done either at the expense of the producer or the distributor, or by a direct subsidy from the Government to the milk boards. Although producers had been receiving slightly better prices year by year production had not increased. This was due partly to the fact that milk production was the most exacting and most strictly supervised branch of agriculture, partly to increasing expenditure in wages, and partly to developments in measures for the eradication of tuberculosis. There would shortly be introduced a scheme whereby nursing and expectant mothers, as well as children under school age, could receive a pint of milk a day on the certificate of a medical officer at a cost of twopence a pint. The claim was sometimes made that children in hospitals should receive milk at a cheap rate, but the care of the poor and the sick was the responsibility of the community as a whole and not of the milk producers.

Mr. A. M'Bride of the Scottish Co-operative Wholesale Society stated that the estimated consumption of milk in this country was twenty-two gallons per head per annum, while in Sweden it was estimated that sixty-eight gallons were consumed. He considered that this low consumption was due to lack of appreciation by the public of the food value of milk, to the known fact that milk was a medium of spreading infectious disease, and to the lack of purchasing power of the unemployed and the poor. To secure an increased demand for milk the public must be instructed in its great value as a food, and all supplies must be treated so that milk could no longer be regarded as a potential source of danger. Milk which did not conform to the "certified" or "tuberculin-tested" standards should be pasteurized and bottled before being offered for sale. The problem for the distributor was the treatment of the huge volume of milk which did not belong to any grade and which constituted the bulk of the supplies to-day. Fortunately for the public many distributors were ahead of legislation in subjecting this milk to pasteurization.

Dr. W. G. Clark, medical officer of health for Edinburgh, said that milk must be produced from healthy animals, and the method of distribution should be such that the risk of infection would be reduced to a minimum. The medical profession, said Dr. J. D. Comrie, was insistent that the transmission of tuberculosis by milk must be prevented. Ordinary milk might meantime be pasteurized, which rendered it safe with certain reservations; but the ideal should be the eradication of tuberculosis from the cows that supplied the milk and the ultimate distribution of milk which in every case conformed to "certified" and "tuberculin-tested" standards. Miss A. B. Muir of the Educational Institute of Scotland said that 90 per cent. of school children readily took milk and were benefiting by it, and she recommended that a daily ration of free milk should be regarded as a social service operating equally for all children.

Dr. J. Russell Greig, director of the Animal Diseases Research Institute, expressed sympathy with the dairying industry because the public did not sufficiently appreciate the need for clean pure milk. To-day the veterinary profession, the medical profession, and mothers were united in a determination to clear the herds of tuberculosis, which he believed would be achieved. Dr. Margaret Martin regarded pasteurization as a temporary expedient with eradication of tuberculosis as the ideal. There was no substitute for milk for the pre-school child and the nursing mother. On the whole the incidence of bovine tuberculosis was less than it was ten years ago, and progress was gradually being made towards providing safe milk. Dr. Joan McMichael stated that while the average

consumption of milk per head of the population was about half a pint daily that among the lower-paid wage-earners was not more than one pint per head per week. This was due not so much to ignorance as to lack of means, and it would be necessary either to lower the cost of milk or to provide free milk for school children, mothers, and babies. Mr. T. G. Henderson of the Scottish Milk Marketing Board did not think a modern distributive large-scale business could be operated to-day if milk was not pasteurized. To reach the stage when pasteurization was unnecessary there would have to be a radical change in distribution, and prices would be increased through the necessity for collecting the milk twice daily at the farms. No whole milk was used for manufactured articles—for example, umbrella handles—only separated milk or whey. The board dealt energetically with cases of unsatisfactory milk, and it might be taken that practically the whole supply to school children was of "T.T." quality. It was necessary to have a surplus of milk and to dispose of this to manufacturers at prices which would enable them to meet competition.

Correspondence

Hospital Policy and the H.S.A.

SIR,—Dr. James Melvin's letter in the *Supplement* of December 24 (p. 391) contains so much that is good that it is distressing to find that on its main theme it reveals such an absence of knowledge. In it he instances my letter in the *Supplement* of December 10 (p. 367) as revealing the "inept drift towards a State medical service" of the Council of the B.M.A. and of myself who on its Hospital Policy am its principal mouthpiece. He cannot have been present at the last Annual Representative Meeting of the B.M.A. or he would have known that I spoke more firmly about the drift of patients away from the general practitioner to out-patient departments than he has expressed himself in his letter, and that I also there pointed out that the similar drift away from the private consultant must cease. If he was not present he could have read the reports of that meeting in the *Supplement*, and might well have taken the trouble to do so before accusing the Council and myself as he has done.

So far as the new contributory scheme, which the London Voluntary Hospitals Committee is recommending to London voluntary hospitals, is concerned, this will not only *not* increase this drift but will diminish it. If Dr. Melvin had read my letter against which he declaims he would have known that, in recommending the scheme to these hospitals, the London Voluntary Hospitals Committee is also recommending that the members of the scheme should not receive consultant services at "out-patients." Nay, further, it is recommending that persons of a like economic status should similarly be declared ineligible to receive treatment at out-patient departments. This was one of the provisions of the scheme which the Council of the B.M.A. induced the London voluntary hospitals to make, and was one of the things which led the Council to give its provisional approval to it.

It is deplorable that in endeavouring to organize the medical profession exactly on the lines which Dr. Melvin seems to wish the Council should be subjected to such an attack as that which he makes upon it.—I am, etc.,

York, Dec. 26. PETER MACDONALD.

National Eye Service

SIR,—In the *Supplement* of November 26 (p. 331) it is stated that the Ophthalmic Group Committee is to "explore" the matter of "multiplicity of addresses." The services of the man with special knowledge should be available for the greatest number, and, moreover, the ophthalmic medical practitioner with "six or more addresses" is helping in what might well be one of the prime concerns of the committee—namely, the extension of the field of the service. He should be urged to add to his addresses rather than to restrict their number. Conversely, the one who uses the National Eye Service as a "pot-boiler," or the other who adopts it as a side line to a general practice, may come more suitably within the purview of the type of negative and somewhat meddlesome "exploration" envisaged by the report.

At present the N.E.S. in relation to public requirements requires stimulating, not stifling, action. The committee has plenty of other fields for its explorations, and I venture to suggest some: the dispensing side of the N.E.S.; the relation between the Association of Dispensing Opticians, N.O.T.B., and Allocation Committee, and the administrative weakness of having a common secretary; the necessity for a rapid increase in the number of N.O.T.B. centres, and possible financial backing of junior dispensers; the apparent appropriation of "good pitches" by big dispensing firms and the quality of staff employed by them; the desirability of a continuance of the present monopolistic system of licensing; the administrative system adopted by the N.O.T.B. by which opticians may invade medical territory, exercise supervision over medical personnel, and the need for close control of the system by medical representatives; and other matters which space considerations do not permit of introduction.

Ophthalmic medical practitioners have a right to expect that the new Group Committee will concern itself more with major matters affecting their interests and less with comparatively "piffling" trifles.—I am, etc.,

Ilford, Essex, Dec. 12. F. J. DARBYSHIRE.

Recognition of Orthoptists

SIR,—The short letter of Mr. H. Campbell Orr (*Supplement*, December 17, p. 380) will not stop the rot of unscientific practice which increasingly threatens the medical profession from within unless the import of that letter is appreciated not only by practitioners specially concerned with the eyes but by practitioners whose supreme duty it is to see the patient as a whole and, one might add, by the Council of the British Medical Association, whose duty it is to see the medical profession as a whole.

I hesitate to quote from Mr. Orr's letter for fear of coming between your readers and the thing in itself. However, Mr. Orr, speaking "in plain English," uses the phrase "*has no scientific foundation*" (italics mine). To that statement I, also speaking plainly, beg to give unqualified support. I also "should be pleased if the Ophthalmic Group Committee would issue a statement giving the *proven facts* [italics mine] on which this system of training is based." I also "*do not want theories*" (italics mine). Nor, I imagine, does anyone who, having no vested interest in the matter, desires to protect the patient from a system so clearly stamped with the stigmata of charlatanry—namely, this very absence of scientific foundation, this very absence of proven facts, this very reliance on a plausible or any theory, statistics which reveal nothing but the effect of a personal equation, the application of the method of mass statistics without either recognition or definition of the many unknown and variable factors, the absence of controls in most of the cases, and the absence of adequate controls in all—together with that advent of unrecognized practitioners to which Mr. Orr refers in his pregnant communication.

So, to justify its recommendation, which affects the medical profession as a whole, let the Ophthalmic Group Committee issue the *scientific statement* suggested by Mr. Orr, and I will bind myself to offer a *scientific criticism* of it for your columns.—I am, etc.,

Liverpool, Dec. 19. BERNARD CHAVASSE.

The Mental After Care Association (founded in 1879) appeals again for support. Over 4,000 patients were dealt with in 1938. Convalescence and assistance were given to incipient cases, as well as to recovered patients. Work was found, accommodation given, tools, clothing, teeth, and glasses provided. The office is at 354, Grand Buildings, Trafalgar Square, W.C.2.

British Medical Association

OFFICES, BRITISH MEDICAL ASSOCIATION HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1.

Addresses, etc.

SECRETARY (Telegrams: Medisecra Westcent, London).

EDITOR, BRITISH MEDICAL JOURNAL (Telegrams: Aitiology Westcent, London).

SUBSCRIPTIONS, ADVERTISEMENTS, etc. (Telegrams: Medisecra Westcent, London).

Telephone number of British Medical Association and British Medical Journal, Euston 2111 (internal exchange, five lines).

SCOTTISH SECRETARY: 7, Drumsheugh Gardens, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 24361 Edinburgh.)

Cumann Doctúirí na h-Eireann (I.M.A. and B.M.A.): 18, Kildare Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 62550 Dublin.)

Diary of Central Meetings

DECEMBER

30 Fri. Public Health Committee, 2 p.m.
Physical Medicine Diploma Subcommittee, 2.30 p.m.

JANUARY

3 Tues. Organization Committee, 2 p.m.
Science Committee, 2.30 p.m.
4 Wed. Finance Committee, 2 p.m.
5 Thurs. Insurance Acts Committee, 2 p.m.
10 Tues. Joint Committee of B.M.A. and T.U.C., 2.15 p.m. (at Transport House, Smith Square, S.W.).
Naval and Military Committee, 2.30 p.m.
18 Wed. **Council**, 10 a.m.
31 Tues. Mental Health Committee, 2.15 p.m.

Annual Meeting of the B.M.A., Aberdeen, 1939

The 107th Annual Meeting of the British Medical Association will be held during the week beginning July 24, 1939, at Aberdeen, under the Presidency of Dr. Thomas Fraser, C.B.E., D.S.O., M.B., Ch.B., D.P.H., D.L., consulting physician, Aberdeen Royal Infirmary. The clinical and scientific work of the meeting will be divided among sixteen Sections, meeting on Wednesday, Thursday, and Friday, July 26, 27, and 28. The names of the Sections and their Presidents are printed below. The first four Sections will each meet on three days, the next eleven on two days, and the last one on one day. The full list of officers of Sections and further information about arrangements for the Aberdeen meeting will appear in later issues.

Presidents of Sections

Medicine: A. Greig Anderson, M.D., F.R.C.P., Aberdeen.
Obstetrics and Gynaecology: Professor R. W. Johnstone, C.B.E., M.D., F.R.C.S.Ed., F.C.O.G., Edinburgh.
Orthopaedics and Fractures: Alexander Mitchell, Ch.M., M.B., Aberdeen.
Surgery: Professor J. R. Learmonth, Ch.M., F.R.C.S.Ed., Aberdeen.
Anatomy and Anthropology: Professor Alexander Low, M.D., Aberdeen.
Diseases of Children: Professor G. B. Fleming, M.B.E., M.D., Glasgow.
Medical Sociology (Nutrition): Sir John Boyd Orr, D.S.O., *M.C.*, M.D., F.R.S.Ed., Aberdeen.
Neurology and Psychiatry: C. P. Symonds, D.M., F.R.C.P., London.
Ophthalmology: W. Clark Souter, M.D., D.O., Aberdeen.
Oto-Rhino-Laryngology: H. Bell Tawse, M.B., Ch.B., F.R.C.S., Nottingham.
Pathology and Bacteriology: Professor John Cruickshank, M.D., Aberdeen.
Pharmacology, Therapeutics, and Anaesthetics: Professor David Campbell, *M.C.*, M.D., F.R.F.P.S., Aberdeen.
Physiology and Biochemistry: Professor E. D. Adrian, M.D., F.R.C.P., F.R.S., Cambridge.
Public Health and Hygiene: J. M. Mackintosh, M.D., D.P.H., Edinburgh.
Radiology: Russell J. Reynolds, C.B.E., F.R.C.P., D.M.R.E., London.
Tropical Medicine: Lieutenant-General W. P. MacArthur, C.B., D.S.O., O.B.E., M.D., F.R.C.P., London.

Pathologists Group

The Pathologists Group of the British Medical Association held its annual meeting on November 29 under the chairmanship of Dr. A. F. Sladden. Ten members were present. The conference considered the constitution of the group committee. Under the new method of group organization approved by the Council the group has power to appoint by postal vote a committee of not less than six members (the number to be subject to the approval of the Council) to hold office for three years. The conference resolved to recommend to the Council that the group committee should consist of nine members, not more than five of whom should be resident or practising in Greater London. Nominations were handed in at the meeting and the secretary was asked to bring these names to the notice of the members of the group when inviting nominations for membership of the group committee. The report of the group committee for the year 1937–8 was submitted to the conference by Dr. D. Embleton (chairman of the committee). Several items in the report were discussed in detail and the conference resolved to recommend certain amendments to Appendix H of the Hospital Policy of the Association, which deals with the conditions of appointment of pathologists. It was also agreed to instruct the group committee to explore the possibilities of issuing a scale of minimum fees, for routine examinations and reports on pathological material, applicable to ordinary private patients. The meeting concluded with a vote of thanks to the chairman and to Dr. Embleton for presenting the report.

Branch and Division Meetings to be Held

BERKS, BUCKS, AND OXFORD BRANCH: READING DIVISION.—At Royal Berkshire Hospital, Reading, Wednesday, January 4, 3 p.m. Annual general meeting.

LANCASHIRE AND CHESHIRE BRANCH: MANCHESTER DIVISION.—Joint Dinner and Dance with the Manchester Local Medical and Panel Committee at Midland Hotel, Manchester, Thursday, January 5, 9 p.m. Presentation to Dr. James Sneddon.

METROPOLITAN COUNTIES BRANCH: NORTH MIDDLESEX DIVISION.—Wednesday, January 4. Professor F. J. Browne: "Ante-natal Care."

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION.—At Bolingbroke Hospital, Tuesday, January 3, 8.45 p.m. Film: "The Functional Treatment of Fractures."

METROPOLITAN COUNTIES BRANCH: WOOLWICH DIVISION.—At St. Nicholas Hospital, Tuesday, January 3, 8.30 p.m. Clinical evening.

POSTGRADUATE NEWS

The Fellowship of Medicine announces the following courses: dermatology (open to non-members) at St. John's Hospital, January 3 to 31; series of lecture-demonstrations on neurosurgery (suitable for final F.R.C.S. candidates) at West End Hospital for Nervous Diseases, Mondays and Fridays, at 8 p.m., January 2 to 20; cardiology (open to non-members) at National Hospital for Diseases of the Heart, January 9 to 20; urology at St. Peter's Hospital, January 16 to 28 (men only); chest diseases at Brompton Hospital, January 23 to 28; heart and lung diseases at London Chest Hospital, February 4 and 5. Unless otherwise stated courses are open only to members and associates of the Fellowship of Medicine, 1, Wimpole Street, W.1.

WEEKLY POSTGRADUATE DIARY

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn Road, W.C.—*Fri.*, 4 p.m., Mr. N. Asherson, Pyrexia of Ear, Nose, and Throat Origin.

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle Street, W.C.—*Tues.*, 5 p.m., Dr. A. C. Roxburgh, Syphilis. *Thurs.*, 5 p.m., Dr. J. M. H. MacLeod, Ringworm Infections.

DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE

Section of Surgery.—Wed., 8.30 p.m. Short Papers by Mr. A. H. M. Siddons, Swallowed Foreign Bodies; Mr. A. E. Porritt, Injection Treatment of Hernia.

VACANCIES

All advertisements should be addressed to the Advertisement Manager and NOT *to the Editor*

RESIDENT POSTS

BEVERLEY: EAST RIDING MENTAL HOSPITAL.—Deputy Medical Superintendent (male). Salary £600-£25-£700 p.a.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—H.S. Salary £130-£150 p.a.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—H.P. (male, unmarried). Salary £120 p.a.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—H.S. Salary £125 p.a.

BUCHANAN HOSPITAL, St. Leonards-on-Sea.—H.S. (female). Salary £125 p.a.

EAST HAM MEMORIAL HOSPITAL.—R.M.O. (male). Salary £200 p.a.

GLASGOW CORPORATION.—Second A.M.O. (male, unmarried) for Woodilee Mental Hospital, Lenzie, Glasgow. Salary £300 to £350 p.a.

HARROGATE: ROYAL BATH HOSPITAL.—R.M.O. (male). Salary £200 p.a.

HERTFORDSHIRE COUNTY COUNCIL.—H.P. for Cell Barnes Colony, St. Albans. Salary £200 p.a.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Three H.P.s. Honoraria £50 p.a. each.

HULL CORPORATION HEALTH DEPARTMENT.—A.M.O. (male) for Anlaby Road Institution (Hospital). Salary £350-£25-£450 p.a.

INFANTS HOSPITAL, Vincent Square, Westminster, S.W.—M.O. Salary £300 p.a.

KING'S LYNN: WEST NORFOLK AND KING'S LYNN GENERAL HOSPITAL.—(1) H.P. (2) H.S. Salaries £130 p.a. and £120 p.a. respectively.

LANCASTER AND DISTRICT JOINT HOSPITAL BOARD.—Full-time M.O. for Isolation Hospital, Slyne Road, Lancaster. Salary £425-£25-£525 p.a.

LEEDS CITY.—R.M.O. (male). Salary £350-£25-£450 p.a.

LEICESTER CITY.—M.O. (male) for City Isolation Hospital and Sanatorium, Groby Road. Salary £300 p.a.

LIVERPOOL: ROYAL LIVERPOOL CHILDREN'S HOSPITAL.—(1) M.O. and (2) Surgical Officer for Heswall Branch of the Institution. Salaries £120 p.a. each. (3) Two H.P.s and (4) Two H.S.s. Salaries £100 p.a. each

MAIDA VALE HOSPITAL FOR NERVOUS DISEASES, W.—H.P. Salary £100 p.a.

PORTSMOUTH CITY.—J.A.M.O. (male, unmarried) for St. Mary's Municipal Hospital. Salary £250 p.a.

ROCHDALE INFIRMARY AND DISPENSARY.—S.H.S. Salary £250 p.a.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—C.O. (male). Salary £150 p.a.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, 234, Great Portland Street, W.—Two H.S.s (males, unmarried) for Brockley Hill, Stanmore, Middlesex. Salaries £150 p.a. each.

ST. HELENS HOSPITAL, St. Helens, Lancs.—J.H.S. (male). Salary £150 p.a.

SALISBURY GENERAL INFIRMARY.—(1) R.M.O. (male, unmarried). Salary £250 p.a. (2) H.P. (male, unmarried). Salary £125 p.a.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—H.S. Salary £100 p.a.

SHREWSBURY: ROYAL SALOP INFIRMARY.—(1) H.P. Salary £160 p.a. (2) Two H.S.s. Males, unmarried.

SOUTH SHIELDS: INGHAM INFIRMARY.—Surgical Officer (male). Salary £300 p.a.

SUNDERLAND: ROYAL INFIRMARY.—C.O. and H.S. for Ear, Nose, and Throat Department. Salary £120 p.a.

TYNEMOUTH VICTORIA JUBILEE INFIRMARY.—H.S. (male). Salary £150 p.a.

WESTON-SUPER-MARE HOSPITAL.—H.P. Salary £150 p.a.

WOLVERHAMPTON: ROYAL HOSPITAL.—Anaesthetist. Salary £200 p.a.

NON-RESIDENT POSTS

HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars, S.E.—Hon. Assistant P.

LONDON CHEST HOSPITAL, Victoria Park, E.—(1) Part-time Surgical Registrar. (2) Part-time Registrar for Ear, Nose, and Throat Department. Males. Honoraria £100 p.a. and £50 p.a. respectively.

MANCHESTER: ANCOATS HOSPITAL.—Whole-time Assistant Pathologist. Salary £400 p.a.

MIDDLESEX COUNTY COUNCIL.—Assistant Dental Officer. Salary £500-£25-£700 p.a.

NOTTINGHAMSHIRE COUNTY COUNCIL.—A.S.M.O. (male). Salary £500-£25-£700 p.a.

ROTHERHAM GENERAL HOSPITAL.—Hon. Ophthalmic S.

ROYAL EYE HOSPITAL, Southwark, S.E.—M.O. for Children's Orthopaedic Clinic and Clinical Assistant. Honorarium £100 p.a.

UNCLASSIFIED

ADWICK-LE-STREET AND BENTLEY-WITH-ARKSEY URBAN DISTRICT COUNCILS.—Whole-time M.O.H. and Assistant County M.O. Salary £800-£50-£1,000 p.a.

BIRMINGHAM: GENERAL HOSPITAL.—Registrar for Radiation Department. Salary £300 p.a.

BLACKBURN COUNTY BOROUGH.—Whole-time Assistant School M.O. and Assistant M.O.H. (male) Salary £600-£25-£700 p.a.

BRECON COUNTY.—District M.O.H. Salary £800 p.a.

BRIGHTON COUNTY BOROUGH.—M.O.H. Salary £1,250-£50-£1,750 p.a.

DERBY COUNTY BOROUGH.—Whole-time A.M.O. (male). Salary £500-£25-£700 p.a.

ECCLES AND PATRICROFT HOSPITAL, near Manchester.—J.H.S. Salary £125 p.a.

ESSEX COUNTY COUNCIL.—Assistant School M.O. Salary £500-£25-£700 p.a.

GLOUCESTERSHIRE COUNTY COUNCIL.—Assistant County M.O.H. (male). Salary £600-£25-£700 p.a.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Outpatient Surgical Assistant. Honorarium £50 p.a.

LEICESTER CITY.—Assistant M.O.H. Salary £500-£25-£700 p.a.

LONDON COUNTY COUNCIL.—Full-time A.M.O. Salary £750 p.a.

LONDON HOSPITAL, E.—(1) First Assistant to Ophthalmic Department. Honorarium £150 p.a. (2) Clinical Assistant for *X*-ray Department. Honorarium £100 p.a.

OXFORD: RADCLIFFE INFIRMARY.—Assistant P. to Department of Physical Medicine. Salary £400 p.a.

ROYAL SURGICAL AID SOCIETY, Salisbury Square, Fleet Street, E.C.—Junior Surgeon. Honorarium £105 p.a.

ROYAL SUSSEX COUNTY HOSPITAL.—Hon. Orthopaedic Surgeon.

SHEFFIELD CITY EDUCATION COMMITTEE.—School M.O. Salary £800-£50-£1,000 p.a.

SHOREDITCH METROPOLITAN BOROUGH.—Assistant M.O.H. (male). Salary £650-£50-£750 p.a.

SOUTHALL BOROUGH.—Whole-time Assistant M.O.H. (male or female). Salary £600-£25-£700 p.a.

STROUD URBAN AND RURAL DISTRICTS AND NAILSWORTH URBAN DISTRICT.—M.O.H. and School Medical Inspector. Salary £800-£25-£900 p.a.

WEYBRIDGE HOSPITAL.—Radiographer.

WILLESDEN CORPORATION.—Whole-time A.M.O. (male). Salary £600-£30-£750 p.a.

MEDICAL REFEREE UNDER THE WORKMEN'S COMPENSATION ACT, 1925, for the Barnard Castle, Darlington, Leyburn, Northallerton, and Richmond County Court Districts (Circuit No. 2). Applications to the Private Secretary, Home Office, Whitehall, S.W.1, by January 18.

MEDICAL REFEREE UNDER THE WORKMEN'S COMPENSATION ACT, 1925, for the Lerwick Sheriff Court District (Sheriffdom of Caithness, Orkney, and Shetland). Applications to the Private Secretary, Scottish Office, Whitehall, S.W.1, by January 18.

To ensure notice in this column advertisements must be received not later than the first post on Tuesday mornings.

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 33, 34, 35, 36, 37, and 39 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 38 and 39.

APPOINTMENTS

BELILIOS, A. D., M.B., Examining Factory Surgeon for the Wimbledon District (Surrey).

FLEMING, J. A. C., F.R.C.S.Ed., D.R.Ed., Whole-time Radiologist, Dundee Royal Infirmary.

MINTON, J., F.R.C.S., Ophthalmic Surgeon to Out-patients, Hampstead General Hospital.

PEARSON, R. S. Bruce, D.M., M.R.C.P., Assistant Physician, King's College Hospital, Denmark Hill, S.E.

CITY OF LONDON MATERNITY HOSPITAL, City Road, E.C.—*Senior Resident Medical Officer:* A. Woolstone, M.R.C.S., L.R.C.P. *Junior Resident Medical Officer:* Charles V. Salisbury, F.R.C.S.Ed.

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcements of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

BIRTHS

CLAYE.—On December 20 at 1, North Grange Mount, Leeds, 6, to Elaine, wife of Andrew Moynihan Claye, M.D., F.R.C.S., a daughter.